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Office of Environmental Services
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Re: LDEQ, AI# 168755, Public Comments for “Louisiana’s Annual Monitoring Network Plan” (2022)

To Whom It May Concern:

This letter is in response to a request for public comments on the Louisiana Department of Environmental Quality’s (LDEQ) “Annual Monitoring Network Plan” of April 14, 2022. This document lays out plans for the operation of 35 stationary ambient air monitors and 5 mobile air monitors designated for the LDEQ’s National Ambient Air Quality Standards (NAAQS) air monitoring program.

The LDEQ asked reviewers to: (1) *“determine if the network requires any modifications to continue to meet its monitoring objective and data needs (through termination of existing stations, relocation of stations, or establishment of new stations)”*, and (2) to *“investigate ways to improve the network to ensure that it provides adequate, representative, and useful air quality data”*.

The U.S. Environmental Protection Agency (EPA) clarifies that the intent of the Clean Air Act (CAA) with regards to the establishment of the National Ambient Air Quality Standards (NAAQS) is ***“to provide protection for the nation’s public health and the environment”***.¹ To ensure that LA’s air monitoring plan lives up to this intention, I reviewed the location of air monitors² relative to high risk sites located adjacent to or near high-risk air emission sources, such as airports, highways and LA’s 409 Toxics Release Inventory (TRI)-reporting facilities (2018-2020).³ A summary of my qualifications, education, and experience is provided in **Appendix A** of this report.

¹ US EPA. Process of Reviewing the National Ambient Air Quality Standards. Available at: <https://www.epa.gov/criteria-air-pollutants/process-reviewing-national-ambient-air-quality-standards>

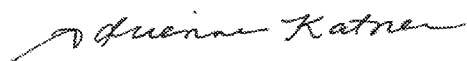
² LDEQ. LA Air Monitoring Network Plan. LDEQ Office of Environmental Assessment, Air Planning and Assessment Division, Baton Rouge, LA. April 14, 2022. Available at: <https://edms.deq.louisiana.gov/app/doc/view?doc=13228415>

³ EPA 2022. TRI Toxics Tracker. Available at: [https://www.epa.gov/toxics-release-inventory-tri-program#:~:text=The%20Toxics%20Release%20Inventory%20\(TRI,agencies%2C%20companies%2C%20and%20others.](https://www.epa.gov/toxics-release-inventory-tri-program#:~:text=The%20Toxics%20Release%20Inventory%20(TRI,agencies%2C%20companies%2C%20and%20others.)

Air monitor locations were mapped in Google Earth and evaluated within the context of their designated objective (Background, Source-Oriented, etc), measured pollutants, and proximity to major air emission sources, including TRI-reporting facilities that reported >100 pounds of stack or fugitive air emissions in 2018-2020. Air monitors are indicated in the maps which following by red placemarks, while TRI-reporting facilities are indicated by black boxes. Other information used to evaluate the LDEQ's air monitoring program included review of EPA's place-based estimates of risks for cancer and respiratory disease by sources and chemicals. Specific attention is paid throughout this report to gaps in the air monitoring system with respect to the EPA's high-risk designated areas.⁴

The conclusion of this analysis is that the proposed air monitoring network plan does not meet the program's specified objectives. Those objectives are listed in the plan as follows: (1) *"to provide air pollution data to the general public in a timely manner"*; (2) *"to support compliance with ambient air quality standards and emissions strategy development"*; and (3) *"to support air pollution research studies such as health effects assessment"*. The evidence to support this conclusion is presented throughout the body of this report. **Recommendations are summarized at the conclusion of this report to ensure that the monitoring plan meets its stated objectives.**

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⁴ The U.S. Environmental Protection Agency's (EPA) AirToxScreen model was used to evaluate risks attributable to air emissions. The model estimates of cancer risk are based on air concentrations from multiple sources including that of Toxics Release Inventory (TRI)-reporting facilities. This model as well as all of these data are available at: <https://epa.maps.arcgis.com/apps/dashboards/fb6e6b70c7e2480c8ef88cc8e9c061ac>

Public Comments on Louisiana Department of Environmental Quality's 2022 "Annual Monitoring Network Plan": Review of Air Monitor Objectives, Locations and Measured Pollutants

Adrienne Katner, D.Env., M.S.

1. "General Background" Air Monitors

The LA Department of Environmental Quality (LDEQ) relies on 35 stationary and 5 mobile air monitors in a state with >400 TRI-reporting facilities (2018-2020). Of the 35 stationary monitors, ten are designated "General Background" monitors (29%) with respect to their stated monitoring objective.

It is common practice to place general background monitors far from sources under investigation to be able to differentiate what the source is emitting with what is naturally occurring in the environment due to either natural or other sources. These "General Background" monitors measure ozone or O₃ (9 of the 10 air monitors), particulate matter (2 PM_{2.5} air monitors), sulfur dioxide (1 SO₂ air monitor), hydrogen sulfide (1 H₂S air monitor), nitrogen oxides (1 NO_x air monitor), and volatile organic compounds (1 VOC air monitor).

A closer review of just one of these "General Background" air monitors, **monitor #12 in Garyville, LA**, reveals that it is placed right in the middle of, and less than one mile from each of four different TRI-reporting facilities: (1) Atlantic Alumina (Noranda), a metal fabrication industry, (2) Nalco, a chemical industry, and (3) Rain CII and (4) Marathon Garyville, both refineries (**Figure 1**). The latter factory is the fourth largest refinery in the United States (U.S.). Hazardous air pollutants emitted from refineries include benzene, toluene, ethylbenzene, xylene, and other VOCs. This particular air monitor measures ozone, a secondary pollutant, which forms when heat and sunlight cause chemical reactions between NO_x and VOCs.

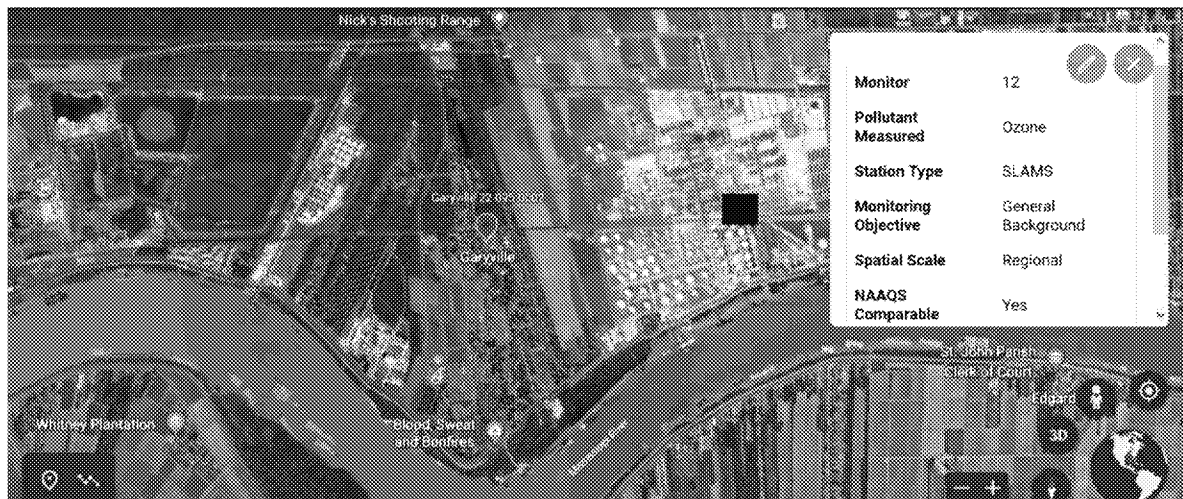


Figure 1. Garyville's "General Background" ozone air monitor is < 1 mile from the country's fourth largest refinery in the U.S.- Marathon-Garyville Refinery (right), < 1 mile from Noranda Alumina, and right in the middle of 4 TRI-reporting facilities.

The location and pollutant measured for this background monitor is a concern as it has become generally accepted knowledge in the last few decades that air emissions from refineries can be

transported for several miles. In fact one recent Texas study, authored by researchers at the University of Texas, Baylor College of Medicine, and John Hopkins University, found a statistically significant increased risk of incident cancer diagnosis across all cancer types for people residing within 20 miles of an oil refinery (Williams et al 2020).^{5,6}

Similarly, the **Meraux air monitor (#22)**, which is also classified as “General Background” is located < 1 mile from the Valero Meraux Energy Corporation (**Figure 2**). It measures ozone, SO₂ and H₂S.



Figure 2. Meraux’s “General Background” air monitor measures ozone, SO₂ and H₂S. It is < 1 mile from the Valero Meraux Energy Corporation.

Finally, the **Dutchtown monitor (#10)**, which is also classified as “General Background” is less than two miles from the nearest TRI-reporting high emissions facility, and less than four miles to eight distinct TRI-reporting facilities, including Occidental, Shell Petroleum, BASF, Westlake, Linde and Hexion (**Figure 3**). It monitors VOCs, NO_x and O₃. Based on EPA’s AirToxScreen model, stationary sources in this particular air monitors census tract may account for 63% of the total cancer risk (57 out of 90 cancers in a million), yet oddly enough, there is no comparison “Source Oriented” air monitor (i.e., a monitor targeting emissions from a specific facility), unless you count the “High Population Density” Geismar monitor (#13). But the Geismar monitor (#13) only measures PM_{2.5} so it can’t be evaluated against the “Background” measures obtained by the Dutchtown monitor (#10), as monitor #10 only measures O₃, NO_x, and VOC.

⁵ Williams SB, Shan Y, et al. Proximity to oil refineries and risk of cancer: A population-based analysis. JNCI Cancer Spectr. 4(6). DOI: 10.1093/jncics/pkaa088.

⁶ It is worth noting that due to the long latency of diseases like cancer, it is possible that many “fenceline” communities (i.e., adjacent to industry), may not be living long enough to be diagnosed with cancer. Indeed, the life expectancy rates for the census tracts around General Background air monitor #12 range between 70 and 75.

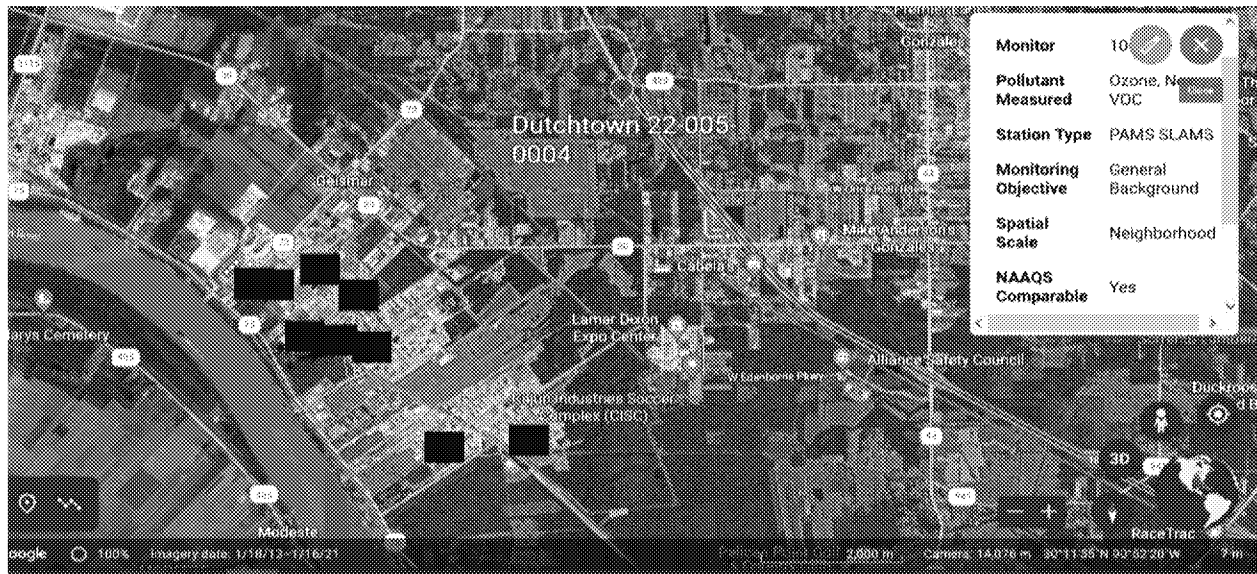


Figure 3. Dutchtown’s “General Background” air monitor measures ozone, NOx and VOCs

It is generally good QAQC for each background monitor to be associated with at least one source-oriented monitor in the region, that it will be appropriately located away from sources, and that it will measure the same pollutants as the source-oriented monitor to enable comparison. For example, it appears that the **Meroux monitor (#22)** is the General Background monitor to the Source-Oriented Chalmette monitor (Monitor #7). This Source-Oriented air monitor (Monitor #7) measures PM2.5, PM10, SO2 and H2S, which can be compared again some of the measures from the Meroux Background monitor (#22), specifically SO2 and H2S, but not O3.

While it is good QAQC to have background monitors for comparison, given the potential public health consequences of industrial emissions and accidents in this high-density industrial area, it is my opinion that given the limited number of air monitors in use, any available monitor should be oriented towards high risk sources, which if consistently high can then be evaluated against an appropriate background comparison, for which the mobile air monitors can then be used.

An extensive review of Background monitors was beyond the current resources and time of this reviewer. However, one can conclude from this brief review of Background Monitors that LDEQ’s plan of monitor placement, pollutants measured, and comparison Source-Oriented monitors requires thorough external review and vetting by external regulators with an interest in protecting public health.

With respect to the **Dutchtown monitor (#10)**, we would recommend positioning this monitor closer to the high density industrial area, in a residential area, and including measures of VOCs in general, and ethylene oxide in particular as it drives health risks in this area. Based on EPA’s cancer risk estimates, ethylene oxide accounts for approximately 55% (50 cancers per million) of total cancer risk (90 per million) in the census tract. Ethylene oxide has a half-life in air of 69-149 days. It also accounts for over half of the relative cancer risk in the state of LA based on the EPA’s Risk Screening Environmental Indicators Model (RSEI) (**Figure 4**).

Other VOC's which LDEQ could monitor for in this area are: benzene, acetaldehyde and carbon tetrachloride. While formaldehyde contributes a high estimated cancer risk to the surrounding census tract, it has a half-life in air of 1 hour; and it can also be naturally occurring.

LDEQ's plan of "General Background" monitor placement, pollutants measured, and comparison "Source-Oriented" monitors requires a thorough review and vetting by external regulators with an interest in protecting public health. All available monitors should be oriented towards high risk sources, which if consistently high can then be evaluated against an appropriate background. Monitors #12, 22 and 10 should not be considered a "General Background" air monitors. They should be positioned closer to industry within the nearest residential areas or vulnerable areas (e.g., schools and daycares). They should also include measures of VOCs and PM2.5 at the very least, as well as NOx, SO2, O3, Pb, CO and PM10. Specific monitoring for ethylene oxide may also be necessary where applicable (near ethylene oxide source facilities).⁷ Priority should be given to those facilities with regular violations, compliance problems, or accidents.

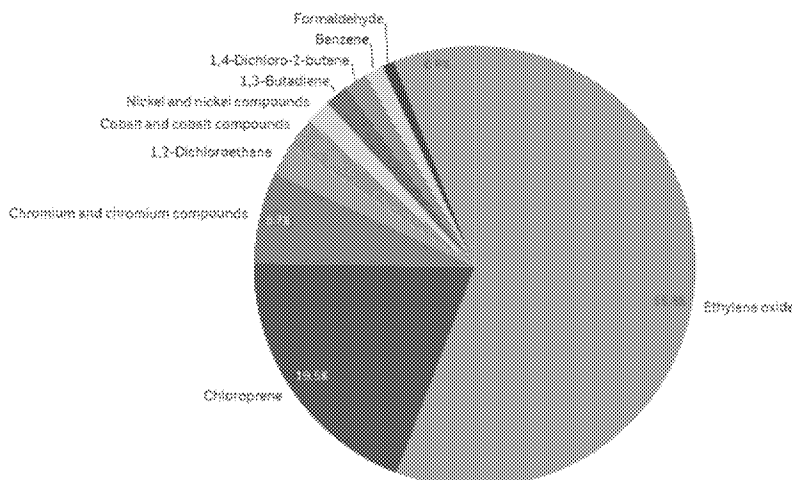


Figure 4. Air pollutants from TRI-reporting facilities throughout Louisiana which contribute the greatest share of relative cancer risk based on EPA's Risk Screening Environmental Indicator (RSEI) model

2. Source-Oriented Air Monitors

There are only five air monitors (14%) throughout all of Louisiana that are classified as "Source Oriented", i.e., near a stationary source like industry. This suggests that there are ~400 high-emission TRI-reporting facilities that have no air monitoring network to ensure they are in compliance with regulatory requirements, and to monitor environmental conditions in the events of an accidental or planned release. The Source-Oriented air monitors which do exist measure lead (2 air monitors), SO2 (2 monitors), PM2.5 (2), PM10 (1), and H2S (1), ozone (1). None of these Source-Oriented monitors measure VOCs, which constitutes the greatest emissions with respect to general industry (>50%), excluding the energy industry (SO2, NOx). This section includes a brief review of the location and pollutants measured by Source-Oriented air monitors.

⁷ As an example, these are just some facilities releasing ethylene oxide (just for the River Parishes): (1) Occidental Chemical, Geismar (population 7,284); (2) Shell Chemical, Geismar; (3) Rubicon, Geismar; (4) BASF, Geismar; (5) BCP Ingredients, St. Gabriel (population 7,374); (6) Taminco, St Gabriel; (7) Ineos Oxide, Plaquemines (population 6,589); (8) DOW, Plaquemines; (9) Se Taylor USA, Plaquemines; (10) Georgia Gulf Chemical, Plaquemines; (11) Evonik, Reserve (population 8,506) and (12) Union Carbide, Hahnville (population 3,609) (the latter two plants are two of the top 25 ethylene oxide emitting facilities in the nation).

One Source-Oriented air monitor is in **Baker, LA (#2)**, which is near the Exide recycle site (**Figure 5A**); one is in **LaPlace, LA (#18)**, which is near a recycling site (**Figure 5B**); one is in **Norco, LA (#27)**, near Shell Refinery (**Figure 5C**); one is in **Chalmette, LA (#7)**, near Rain II Carbon, a petrochemical company (**Figure 5D**); and one is in **Madisonville, LA (#20)**, which is near no obvious source (**Figure 5E**). The latter air monitor is in between a large empty field and an Elementary School.

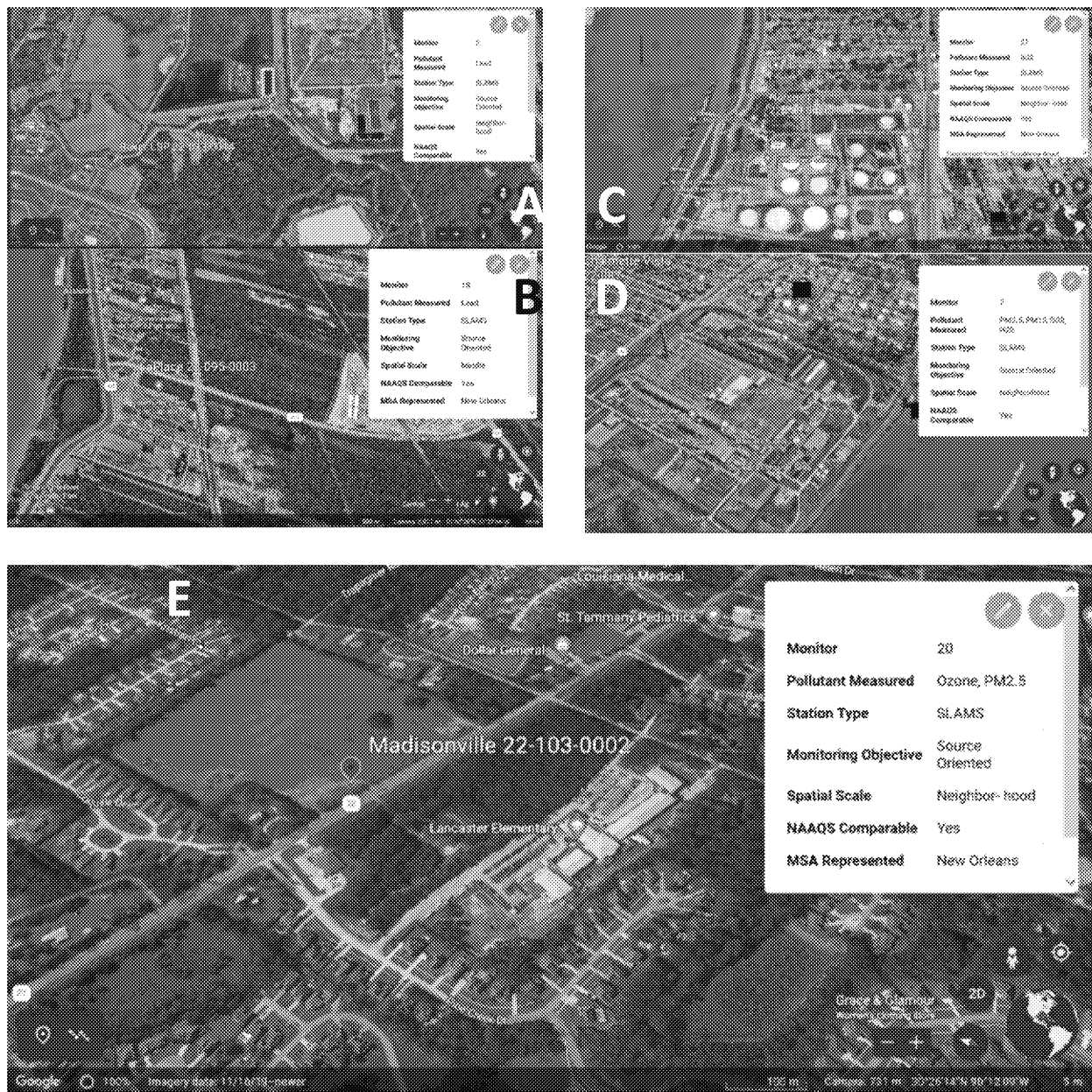


Figure 5. LDEQ’s “Source Oriented” air monitors are near a landfill (A), a recycling site (B), a petrochemical company (C), a refinery (D) and an empty field (E).

If indeed, it is one of the objectives of this plan as stated, to “support compliance with ambient air quality standards and emissions strategy development”, and to “support air pollution research studies such as health effects assessment”, then we would recommend repositioning the **Madisonville monitor**

(monitor #20) to a high risk area, unless there is some stated reason for its current position. Clearly there are many high risk industrial sites LDEQ can choose from. A review of TRI-reporting facilities for Louisiana via EPA's Risk Screening Environmental Indicators (RSEI) model,⁸ and a sorting of facilities based on cancer and non-cancer RSEI scores reveals the following few high-risk facilities, where it is unknown if monitoring is being conducted at all: (1) BASF Corp, Geismar, LA, (2) St. Union Carbide, Hahnville, LA, (3) BCP Ingredients, St Gabriel, LA, (4) DOW Chemical, Plaquemine, LA, (5) Shell Chemical, Geismar, LA, (6) Evonik Corp, Reserve, LA, (7) Sasol Chemicals, Lake Charles, LA, (8) Exxon Mobil, Baton Rouge, LA, (9) Denka/Dupont, LaPlace LA (VOCs are currently being monitored), (10) LACC LLC, Lamotte Chemical, LA, (11) Shell Norco Chemical Plant, Norco, LA; (12) Formosa Plastics, East Baton Rouge, LA (13) Occidental Chemical Holding Corp, Killona and Luling, LA, and (14) Eagle US LLC, Lake Charles, LA. With the exception of Denka, which is monitoring for some specific VOCs, including chloroprene, air monitors could not be found around these facilities for air emissions.⁹ Of these facilities, at least eight are emitters of ethylene oxide (BASF, Union Carbide, Dow, Shell, Sasol, Evonik, LACC, BCP); three have had more than 12 quarters of noncompliance with the Clean Air Act (CAA) (Exxon Mobil, DOW, and Formosa Plastics); and one has had 11 quarters of noncompliance with the CAA (Eagle US 2). Other facilities with 12 months of CAA noncompliance include: (1) Addis Carbon Black Plant, (2) Birla Carbon USA, (3) C&C Marine and Repair, (4) Calumet Princeton Refining, (5) Calumet Shreveport Refining, (6) Lion Copolymer, Beismar, (7) Mosaic Phosphates Co, Faustina Plant, (7) Nucor Steel LA, (8) Phillips 66 Lake Charles Refinery, (9) Reynolds Metals Co, LLC, and (10) Shintech LA Addis Plant. Valero Refining in Norco, LA is also a concern with respect to cancer risk estimates developed by the EPA.

3. Traffic-Associated Air Monitors

Only one air monitor (10%) is designated for "Regional Transport" (it measures PM2.5 and ozone). It is in **Vinton, LA (#34)** near Highway 90. However, it should be noted that there are two other near-traffic air monitors in New Orleans (**Figure 6**), which are located next to **Highways 10 (monitor #25)** and **610 (Monitor #24)**, in New Orleans, LA. These are classified as "High Concentration", near the I-10, and "High Population Density", near City Park in one of the least populated areas of the City. Clarification as to the objective of each monitor should be made with respect to the sources they are monitoring.

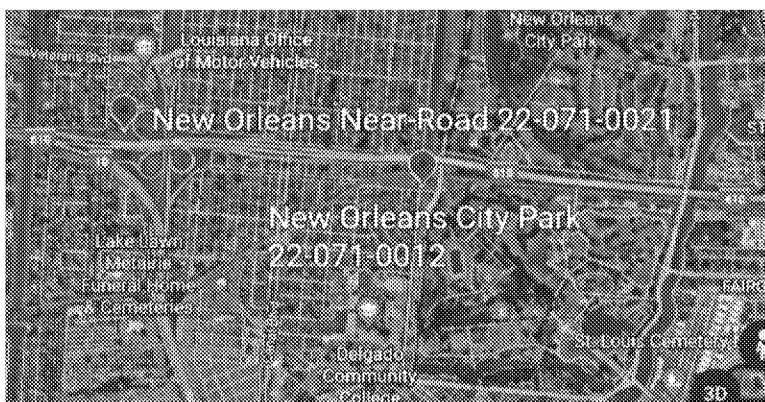


Figure 6. New Orleans' traffic adjacent air monitors are classified as "High Population Density" and "High Concentration" and measure NOX, CO, PM2.5 and PM10.

⁸ EPA. Toxics Release Inventory Risk Screening Environmental Indicator (RSEI) Model: Easy RSEI Dashboard 2.3.10. Washington DC. Available at: <https://edap.epa.gov/public/extensions/EasyRSEI/EasyRSEI.html#analysis>.

⁹ EPA. TRI Toxics Tracker. Washington DC. Available at: <https://edap.epa.gov/public/extensions/TRIToxicsTracker/TRIToxicsTracker.html#continue>

4. High Concentration Air Monitors

Five monitors are classified as “High Concentration” but it is unclear what this designation means, as at least one of these monitors, in **French Settlement (Monitor #11)**, is in the middle of nowhere, near no source (**Figure 7**). This site is also classified as “General Background” also for NOx and O3, and “Population Exposure” for PM2.5. No other air monitoring location has multiple designations which appear to be contrary to the other monitor objectives. Four other “High Concentration” monitors are in Baton Rouge and one is in New Orleans. They measure ozone (5), NOx (4), PM2.5 (2), CO (1), and SO2 (1).



The

Figure 7. Livingston Parish’s French Settlement air monitor is classified as “High Concentration” though it is in a rural area of the state near no known major air emissions source.

Kenner (monitor #16) is another “High Concentration” air monitor, but it has a dual designation as “High Population Density”. However, it does not appear to be near any major source, as it is in the suburbs, and certainly not a high population area (**Figure 8**). This monitor would perhaps be better placed in the communities near the Louis Armstrong New Orleans International Airport, but regulator may also decide that there are other sources of concern which take priority outside of Orleans Parish.



Figure 8. Kenner’s “High Concentration” and “High Population Density” appears to be in an area of low population density and near no major source of air pollution.

5. High Population Density Air Monitors

Eleven monitors are classified as “High Population Density” (31%), of which two are located in Baton Rouge, one is in Hammond, one is in Houma/Thibodaux, one in Lafayette, three are in New Orleans, two are in Shreveport, and one is in Lake Charles. The measures include PM2.5 (all 11 monitors), PM10 (4 monitors), SO₂ (3), Ozone (4), NO_x (3), VOC (1), and CO (1). One air monitor is classified as “High” - it is in Shreveport (Dixie) and measures ozone, but it also appears to be in the middle of nowhere (**Figure 9**).



Figure 9. Shreveport’s “High” monitor, Dixie, is in a rural area near no known major air emissions source.

6. Population Exposure Air Monitors

One air monitor, **Monroe (#23)**, is designated “Population Exposure”. It measures PM2.5 and ozone. It is next to an airport in Monroe, LA (**Figure 10**). This monitor should also include at the very least, lead (Pb). It has been documented that Pb levels in the air and soil around airports is high. This is due to the fact that aviation gas (Avgas) for piston-engine aircraft still contains lead. While jets do not use leaded gas, there are over 190,000 smaller piston-engine aircraft, the kind used to fly into smaller airports like Monroe’s, which typically carry two to ten passengers, are registered with the Federal Aviation Administration (FAA).¹⁰ This fuel is particularly dangerous as it contains tetra-ethyl-lead (TEL), the organic form of lead which is the most toxic form of lead and can be dermally absorbed, as well as inhaled from air surrounding airport, and ingested after settling in soil. This air monitor should be relocated to Lincoln Elementary School, which is 1.3 miles away from the runway (**Figure 10**). It is believed that people living within 1 mile of airports are at risk of being exposed to lead from avgas.¹¹⁻¹² The siting of this air monitor at Lincoln Elementary would allow us to evaluate this assertion.

¹⁰ FAA. Aviation gasoline. US Dept. of Transportation. Available at: <https://www.faa.gov/about/initiatives/avgas>

¹¹ Hitchings M. U.S. EPA aims to slash aviation gasoline emissions. *Glob Refining Fuels Today*. 2010;2:31–35.

¹² Miranda, M. L., Anthopolos, R., & Hastings, D. (2011). A geospatial analysis of the effects of aviation gasoline on childhood blood lead levels. *Environmental health perspectives*, 119(10), 1513–1516.



Figure 10. Monroe’s “Population Exposure” air monitor measures PM2.5 and ozone. It is next to an airport.

7. Unknown Status Monitors

One air monitor is located in EPA’s records but not LDEQ’s records. It is a monitor by Bayou Sauvage National Wildlife Area. As such, it is unknown if this monitor is still in existence or not (**Figure 11**). It reports to monitor for arsenic and PM2.5. However, it is about as far away from any major source as you can get in a low-risk tract with less than 1000 people, where the major risk is due to formaldehyde, a compound commonly found in the environment due to natural processes like forest fires or biomass combustion or decomposition.

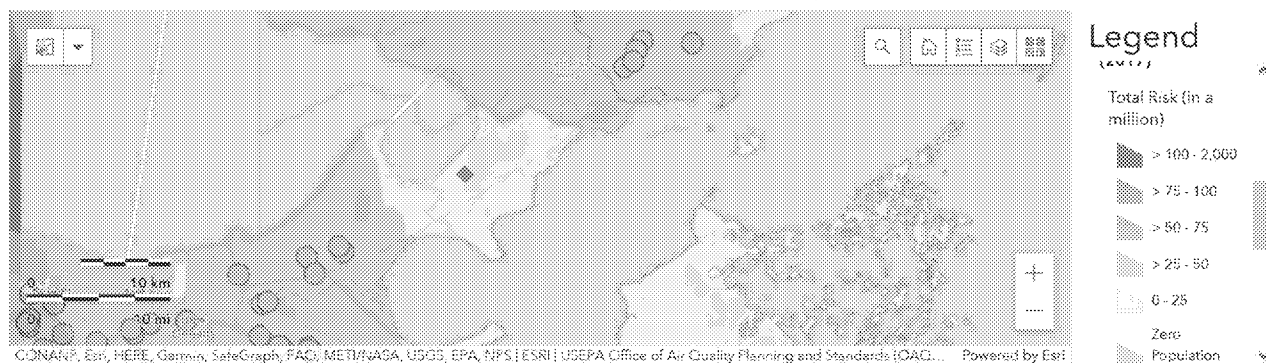


Figure 11. PM2.5 and arsenic air monitor in Bayou Sauvage as viewed through EPA’s AirToxScreen Model.

8. No Source Oriented Air Monitors

From a distance it looks like air monitors are appropriately placed for the most part though there are several heavily industrialized areas of the state with relatively large estimates of cancer risk from stationary sources that do not appear to have any “Source-Oriented” air monitor (**Figure 12**). This is discussed to some extent in Section 2, Source Oriented air monitors.

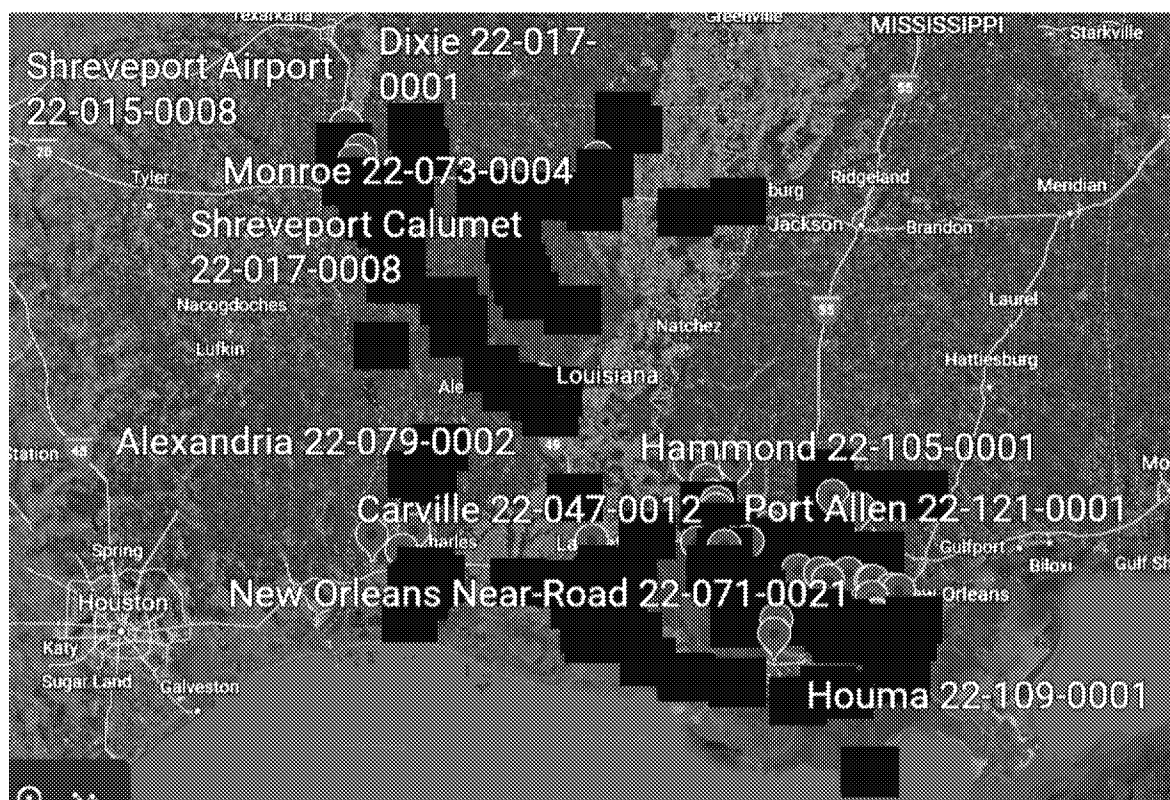


Figure 12. Air monitors (red placemarks) in relation to industry (black boxes)

For example, Lake Charles is a heavily industrialized area where the primary cancer risk driver is, according to EPA's AirToxRisk model, ethylene oxide from industry (**Figure 13**). Yet it only has two air monitors, Westlake and Carlyss. Carlyss is classified as a “General Background” air monitor which measures ozone, and Westlake is a “High Population Area” air monitor which measures SO₂, NO_x, and PM_{2.5}. Neither of these air monitors is considered a “Source Oriented” air monitor, despite being near a major industrial area.

The same can be said of Alexandria which has one air monitor for the “General Background” (**Figure 14**). There is no source-oriented air monitor in this area, which is a surprise considering this area encompasses Colfax, the only commercial facility in the nation allowed to burn explosives and munitions waste.

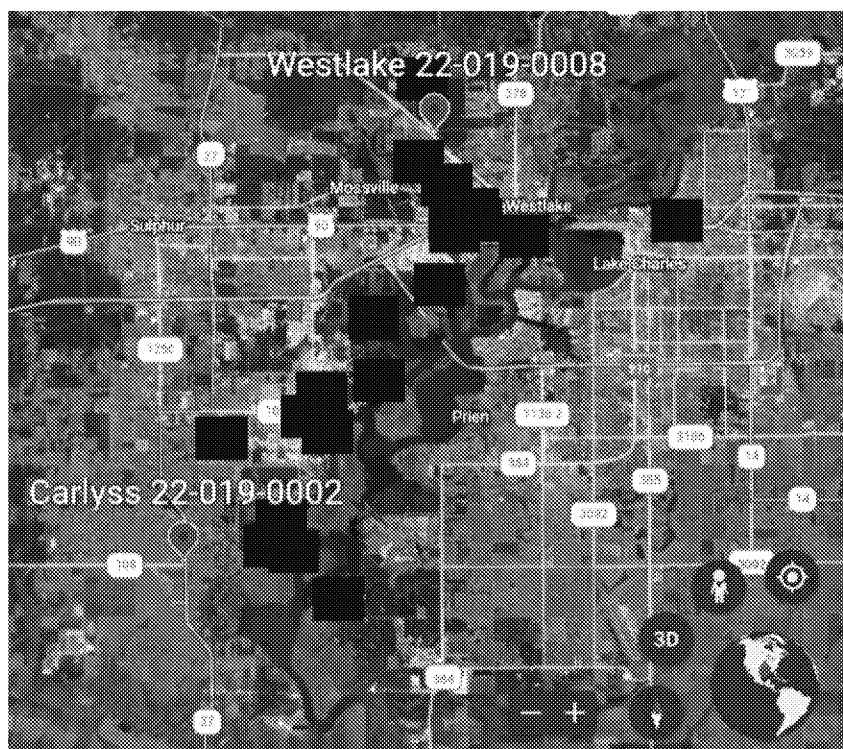


Figure 13. Air monitors (red placemarks) in Calcasieu Parish in relation to industry (black boxes)

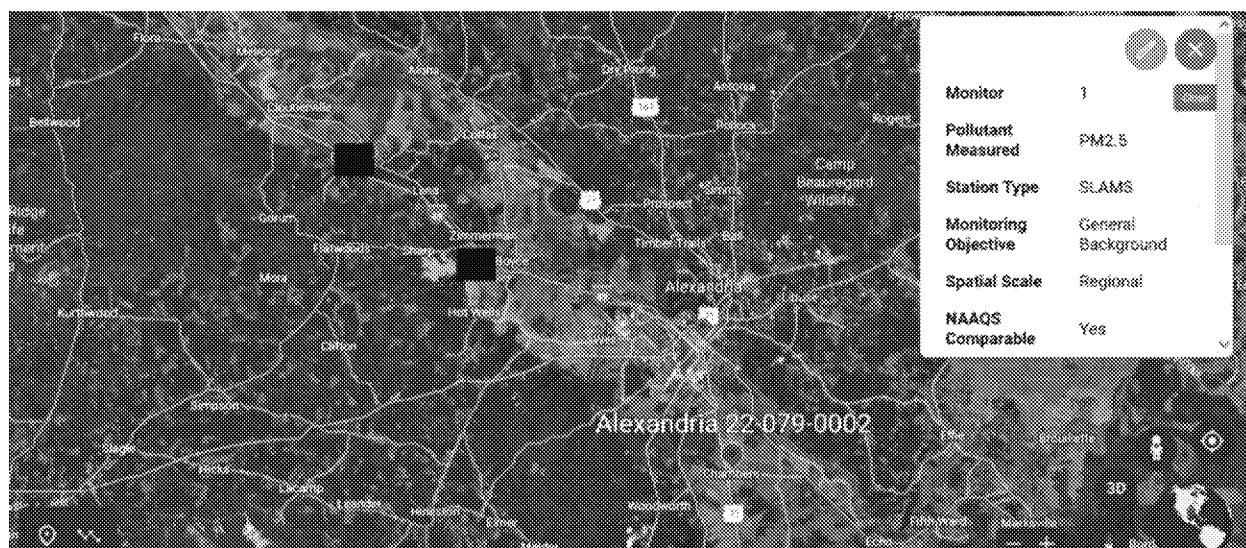


Figure 14. Air monitors (red placemarks) in Alexandria, LA in relation to industry (black boxes)

Conclusion

A recent Louisiana Legislative Audit reported that ***“Louisiana has the highest toxic air emissions per square mile of any state, according to the EPA’s Toxics Release Inventory, and the EPA’s most recent (2014) National Air Toxics Assessment showed parts of Louisiana have high potential cancer risks and/or a high respiratory hazard index.”***¹³ At the same time the auditor reported that LDEQ *“faces challenges related to low staffing levels, high workloads, frequent turnover of staff, and ineffective data systems that make it more difficult to perform its regulatory work. For example, DEQ’s positions dedicated to air quality regulation decreased 14.6%, from 247 in fiscal year 2010 to 211 in 2019.”*

Recently, the State Senate Committee on Environmental Quality voted to defer for yet another year Senator Cleo Fields SB20 air monitoring bill, which would have required air monitoring around high-emission facilities, and for industry to pay for it.¹⁴ The inevitable need for more funds, staff and resources to oversee a program of this magnitude, which the LDEQ estimated at \$17,000 per facility per year in SB20s fiscal note,¹⁵ could have been recouped from the facilities under regulation, and it could have added jobs to improve regulatory surveillance and enforcement. SB20 would also have required that real-time alerts be sent out to communities, which could have been triggered under emergency conditions. A small sample of some of the comments from community members obtained from the video of this hearing communicate their anxiety and desperation on this issue: *“No one from the parish or the plant does nothing”, “No respect for human dignity”, “Someone needs to step in, we can’t do it by ourselves”, and “We shouldn’t be finding out on the news”.*¹⁶ The indifference of the State Senate Committee on Environmental Quality to the appeals of their constituents might be explained by a lack of education or awareness of the issues surrounding the gaps in our state’s air monitoring systems, or by the multitude of conflicts of interest which our elected officials have due to industry campaign contributions (see footnote 13). Regardless of the reason behind this lack of State action, these current political conditions also have the indirect effect of overburdening and underfunding our state regulatory

¹³ LA Legislative Auditor. Monitoring and Enforcement of Air Quality, Department of Environmental Quality. Audit Control #40200007. January 2021. Available at:

[https://www.la.la.gov/publicreports.nsf/0/4f3372abdd0f271862586630067c25d/\\$file/00022660a.pdf](https://www.la.la.gov/publicreports.nsf/0/4f3372abdd0f271862586630067c25d/$file/00022660a.pdf)

¹⁴ A crisis has arisen in Louisiana in that Legislators more often than not vote against measures to protect public health when industry is the target of regulation. As such, the public is in need of federal oversight to ensure public health. One member of the Senate Committee on Environmental Quality that voted against HB20 and against air monitors for the citizens of LA is Senator Sharon Hewitt. Her story can be seen in a recent article on her conflicts of interest with regards to royalties from oil companies here: <https://thelensnola.org/2022/05/06/louisiana-legislator-pushes-bills-benefiting-the-oil-and-gas-industry-and-her-husband/>. The Chair of that particular committee, Senator Eddie J Lambert, who represents District 18 which includes some of the most heavily industrialized areas of the state along the Mississippi River, said in his explanation of why LA fenceline communities did not need air monitors, *“we have a good many safeguards already in effect where the material is present in the DEQ websites with these things so I’m going to defer the bill”* (see video link from footnote 15 at 1:38). [Senator Lambert however did get his resolution SCR30 and bill SB223 out of committee this year (2022), which recognizes April 18-24 as “Love of the Boot” Week, and the creation of specialty license plates, respectively]. Some of the primary contributors to Senator Eddie Lambert’s campaigns have been the Baton Rouge Area Chamber of Commerce, the Crescent River Port Pilots Association, the Louisiana Association Business and Industry, the Louisiana Manufacturers Association, Entergy Corp, American Electric Power, Norpac LLC, Exxon Mobil, Atmos Energy, Occidental Petroleum, Air Products and Chemicals (big ethylene oxide emitters), Chevron Corp, Cloco Corp, ConocoPhillips, Dow Chemical, Merck and Co, Chesapeake Energy, Marathon Petroleum, American Chemical Council, USAA, LA Oil and Gas Association, Koch Industries, BASF, Valero Energy Corp, Westlake Chemical Corp, and LA Mid-Continent Oil and Gas Association.

¹⁵ Legislative Fiscal Office, SB20 Fiscal Note <https://www.legis.la.gov/Legis/ViewDocument.aspx?d=1258182>
<http://www.legis.la.gov/legis/BillInfo.aspx?s=202ES&b=SB20&sbi=y>

¹⁶ Louisiana State Senate. Video of Environmental Quality Senate Commission Hearing of SB20 by Fields. Available at: https://senate.la.gov/s_video/VideoArchivePlayer?v=senate/2022/04/041222ENVQ

agency, the LDEQ, which is responsible for the enormous task of overseeing industry and enforcing federal environmental laws.

Together, these circumstances highlight the urgent need for federal oversight and assistance to LDEQ to responsibly resolve the enormous gaps within LA's air monitoring network.

As an environmental scientist and public health practitioner, I would not be commenting on this plan if I did not feel it rose to the level of a public health emergency waiting to occur. Currently, residents of LA are only notified of emergency incidents associated with industry releases in their area when there is an order for shelter-in-place or evacuation. Incidents reported to LDEQ, State Police or parish emergency response agencies are often not posted publicly, rather they are posted on LDEQ's Electronic Documents Management System (EDMS), a byzantine system which the public is unfamiliar with, and which only reports emergency incidents after delays of up to a week, if those reporting requirements are even met. This pattern of "communication" is a concern partly because of LA's record of industrial accidents. Between 2001 and 2013 there was a total of an average of 9,702 acute hazardous substance events in LA, releasing a total of 14,897 substances with a total of 1,005 victims of these releases. This is an average of two hazardous event incidents per day based on data from the LA Department of Health and LDEQ.¹⁷⁻¹⁸ When these facts are considered with the knowledge that there are over 750 active major air permits and 6,000 to 8,000 active minor permits each year in LA, and there are no known air monitors for an estimated 400 high emissions (>100 pounds) TRI-reporting facilities, questions are naturally raised about whether LDEQ is able to ensure the safety of the communities who live around these facilities.¹¹ But there are other reasons supporting the assertion that LDEQ is not up to the task of releasing emergency data and information of potential public health consequence in a timely manner.¹⁹

In 2018, EPA warned Region 6 EPA officials of the urgent need to educate residents around 25 high ethylene oxide emitting facilities about the health hazards these facilities pose.²⁰ Two of these facilities were in Louisiana, Union Carbide and Air Products/Evonik, in the adjacent parishes of St. John the Baptist and St. Charles. Region 6 EPA officials advised LDEQ to conduct the outreach at this time (in 2018). By 2019, the residents around these facilities had still not been told about the issue; nor were they told by 2020 of the ongoing risks they are being exposed to. They would not be told until August 2021, when EPA conducted a conference call with a handful of parish advocates. It is unknown whether this information was ever received by the actual residents in the affected areas, or by their representing local officials, or by the schools in proximity to these industries.

¹⁷ LDEQ. Electronic Document Management System (EDMS). Query for "Denka Performance Elastomer". Available at: <https://edms.deq.louisiana.gov/edmsv2/advanced-search>

¹⁸ Surveillance reports are limited due to lack of ongoing funding, but state incidents recorded by the State when funding for surveillance was available include: (1) Louisiana Hazardous Substances Emergency Events Surveillance (HSEES) System. 2001-2009: A Cumulative Report. Section of Environmental Epidemiology and Toxicology, LA Department of Health and Hospitals. Available at: https://ldh.la.gov/assets/oph/Center-EH/envepi/LaTSIP/Documents/Annual_Reports/2001-2009_HSEES_Report.pdf; and (2) Louisiana Toxic Substances Incident Program (LaTSIP). 2010-2013: A Summation Report. Section of Environmental Epidemiology and Toxicology, LA Department of Health and Hospitals. Section of Environmental Epidemiology and Toxicology, LA Department of Health and Hospitals. Available https://ldh.la.gov/assets/oph/Center-EH/envepi/LaTSIP/Documents/Annual_Reports/2010-2013_LaTSIP_Report.pdf

¹⁹ LDEQ. Electronic Document Management System (EDMS). Query for "Denka Performance Elastomer". Available at: <https://edms.deq.louisiana.gov/edmsv2/advanced-search>

²⁰ U.S. Environmental Protection Agency Office of Inspector General. Management Alert: Prompt Action Needed to Inform Residents Living Near Ethylene Oxide-Emitting Facilities About Health Concerns and Actions to Address Those Concerns. Report No. 20-N-0128. Washington DC: U.S. EPA OIG. https://www.epa.gov/sites/production/files/2020-03/documents/epaoig_20200331-20-n-0128_0.pdf

This lack of adequate risk communication should concern everyone as a document was unearthed indicating that industrial emissions causing adverse health effects to students at one school located adjacent to one of these facilities had occurred in 2016, two years prior to EPA's alarm. On two separate occasions at the Leon Godchaux school site location, which is on the same block as Air Products/Evonik, one of EPA's top 25 ethylene oxide emitting facilities in the nation, school officials reported to the LA Department of Health (LDH) that several children were suddenly affected with respiratory ailments, headache, vomiting, burning eyes and weakness. Both of these incidents lasted for several weeks, just after Air Product/Evonik in St. John the Baptist was fined for permit violations. The LDH investigated and asserted that these incidents were most likely due to industry releases, as the school is *"located in a high risk area situated among several industrial facilities that produce air-borne particulates and the risk of chemical releases"*. While the causative agent was never confirmed in the EPA's referring report,²¹ it is noteworthy that all of these health outcomes are classic symptoms of acute exposure to both methyl isobutyl ketone and ethylene oxide, both of which are emitted in significant amounts by the Air Product/Evonik facility.

When these facts are considered with the knowledge that there are no known air monitors around this facility, nor for an estimated 400 other TRI-reporting facilities, it raises questions about whether LDEQ is able to ensure the safety of the "fenceline" communities who live around these facilities, or to at least alert the public when there are releases of potential public health concern (other evidence is presented in footnote 22).²² If such data do exist they are surely buried deep within LDEQ's labyrinthine Electronic Documents Management System (EDMS) site, which is as user-friendly as the first IBM personal micro-computer. This again highlights a problem that the public, including researchers, have in finding and accessing data from LDEQ in some usable form.

²¹ Action Plan: Denka Performance Elastomer, LLC- Pontchartrain Facility: LaPlace, St. John Parish, Louisiana. U.S. Environmental Protection Agency, Washington, DC. June 2016. [LINK](#)

²² Sneath S. Louisiana Shell refinery left spewing chemicals after Hurricane Ida. Louisiana Illuminator. April 4, 2021. Available at: <https://lailuminator.com/2021/09/04/louisiana-shell-refinery-left-spewing-chemicals-after-hurricane-ida/>. *"In a matter of just a few days after Hurricane Harvey made landfall in 2017, air pollution levels added up to 39% of the total unauthorized emissions of the previous year in the Houston area, said Luke Metzger, the executive director for Environment Texas. "These emissions absolutely can be big enough to contribute to health problems," he said. The degree of the public health concern is harder to gauge in Louisiana, where air monitoring efforts are often slow to capture peak emission levels directly after a storm, when facilities are likely to belch pollution. After Hurricane Laura came ashore near the border of Texas and Louisiana in August last year, the Texas Commission on Environmental Quality sent out a mobile air monitoring van to detect air pollution in the state within 15 hours. It was days before Louisiana's Department of Environmental Quality did the same. Four days after Hurricane Ida, there was still no data posted to the state agency's website from its mobile air monitors. A state mobile air monitoring lab was expected to deploy Thursday to Norco, about 20 miles (32 km) northwest of New Orleans, according to an EPA report. The Shell refinery there has indicated it will continue flaring until electricity is restored to its facility, said Wilma Subra, an environmental scientist with the Louisiana Environmental Action Network organization who was awarded the MacArthur grant for her work helping residents to understand the public health risks of industrial pollution. But the refinery's lack of electricity and inability to supply steam and nitrogen to the flares means chemicals are not being burned off properly, causing thick black smoke to pour into the sky above residents who are repairing their damaged roofs and cutting broken branches from trees. "Community members in Norco have a right to know what chemicals are in the air they are breathing," Subra said....A state air monitor in Norco stopped collecting data on the day of the storm. It's among 17 state air monitoring sites that stopped working due to power outages, according to an EPA report. The Valero refinery in St Bernard Parish notified the EPA that it shut down its community air monitoring station to protect the equipment. The company was required to notify the federal agency because of past violations of the Clean Air Act at the refinery under its previous owner, Murphy Oil. During Hurricane Katrina, the refinery's tank farm flooded, leaking more than a million gallons of crude oil into 1,800 homes, according to the EPA. It's unclear how quickly Valero is required to get the air monitor back in operation. That's because it's owned by the company, not the state, said Greg Langley, a spokesman for the Louisiana Department of Environmental Quality. "We get readings submissions, but the monitor is not part of our reporting system," he said. "LDEQ does not dictate when it is turned on and turned off." After Hurricane Laura came ashore in the Lake Charles region, air monitors in the area were out from one to four weeks. "*

These facts support the conclusion that LDEQ has failed one of the objectives of this program, which as they state, is *“to provide air pollution data to the general public in a timely manner”* (Figure 14).

This conclusion was also reached by the LA Legislative Auditor in its 2021 report, “Monitoring and Enforcement of Air Quality, Department of Environmental Quality” ([Audit Control #40200007](#)). The audit concluded that LDEQ *“could strengthen its monitoring and enforcement processes by identifying violations and issuing enforcement actions in a timelier manner”*.

With regards to the other objective of this plan, i.e., to *“support compliance with ambient air quality standards and emissions strategy development”*, it cannot be emphasized highly enough that LDEQ has a mere 35 air monitors to ensure compliance with NAAQS, ten are designated “General Background” monitors (29%), and five monitors (14%) are classified as “Source Oriented”. Thus, there is no comprehensive system or responsible monitoring plan to ensure that industry is in compliance with regulatory requirements.



Figure 14. Louisiana Shell refinery in Norco, LA was left spewing chemicals after Hurricane Ida, where a state mobile air monitoring lab had still not deployed on the day this picture was taken. (Source: Sara Sneath)

This fact alone supports the assertion that LDEQ has failed another one of its objectives, which as they state, to ensure *“compliance with ambient air quality standards and emissions strategy development”*.

It is important to reiterate the EPA’s intent with the National Ambient Air Quality Standards (NAAQS) is *“to provide protection for the nation’s public health and the environment”*.²³ LDEQ’s air monitoring network needs to serve a purpose other than meeting regulatory requirements. It is our belief that fenceline communities deserve the same level of public health protection from criteria air pollutants as the general public. Fenceline communities consist of children, the elderly, sick, immune-compromised, and pregnant women, all of whom are particularly more vulnerable than the general population. The burden should be on facilities to prove there are meeting regulations, not on citizens to prove they are not. But one cannot prove that a community’s environment is safe when there is no monitoring, oversight or enforcement.

These gaps in air monitoring suggest that fenceline communities are not protected during routine operations or during accidental or planned releases, and thus, LDEQ fails to meet its final objective to *“support air pollution research studies such as health effects assessment”*.

²³ US EPA. Process of Reviewing the National Ambient Air Quality Standards. Available at: <https://www.epa.gov/criteria-air-pollutants/process-reviewing-national-ambient-air-quality-standards>

Recommendations

The following recommendations are based on this limited review of LDEQ's air monitoring plan:

- **The designation of each air monitor should be re-evaluated to ensure that locations and pollutants monitored are appropriate for its specified classification.**

For example, given its proximity to industry, monitor #12 (Garyville), should not be considered a "General Background" air monitor, and it should also include measures of VOCs, NOx, SO2, O3, Pb, CO2, PM10 and PM2.5. Similarly, monitor #22 (Meraux) should also not be classified a General Background monitor, and should include in its detection NOx, PM2.5., PM10 and CO. We also recommend repositioning the "Source Oriented" Madisonville monitor (monitor #20) to an actual high risk area. Possible alternative locations can include: (1) BASF, Geismar, LA, (2) Union Carbide, Hahnville, LA, (3) BCP Ingredients, St Gabriel, LA, (4) DOW Chemical, Plaquemine, LA, and (5) Shell Chemical, Geismar, LA; and (6) Air Products/Evonik, Reserve, LA. The "High Concentration" air monitors in French Settlement (monitor #11), Kenner (monitor #16), and Dixie (monitor #9) should be relocated as they do not appear to be near any major source, nor serving a useful purpose. Finally, Highways 10 (monitor #25) and 610 (Monitor #24), in New Orleans, LA, should be re-designated as "Regional Transport" monitors, which based on their proximity to these sources appears to be their purpose.

- **LDEQ needs to increase its air monitoring to ensure regulatory compliance.**

There are only five air monitors (14%) throughout LA that are classified as "Source Oriented". And there are only 2 VOC air monitors in the state, one of which is classified as Background monitor. Thus, there are approximately 400 high-emission TRI-reporting facilities that have no air monitoring network to ensure they are in compliance with regulatory requirements, and to evaluate whether neighboring communities are safe in the event of an accidental release. For example, Lake Charles is a heavily industrialized area which has no evident "Source Oriented" monitor. The same can be said of Alexandria which has the only commercial facility in the nation allowed to burn explosives and munitions waste, Colfax, yet there is no "Source Oriented" monitor that is evident in the area. In the event that LDEQ did increase air monitoring, they estimated that they would need more funds, staff and resources, which they estimated would cost \$17,000 per facility per year in SB20s fiscal note, a very modest amount for a facility raking in millions if not billions per year. These costs can be recouped from the facilities under regulation, and it would provide much needed jobs and would ensure the safety of our citizens.

- **Given the limited number of air monitors and the potential public health consequences of industrial emissions and accidents, any existing air monitors, including "General Background" monitors, should be oriented towards residential areas in high risk areas.**

If measures are consistently high, they can then be evaluated against an appropriate background. With respect to the Background Dutchtown monitor (#10), we recommend relocating this monitor closer to the high density industrial area, and include measures of VOCs in general, and ethylene oxide in particular.

- **Background monitors, when used, should measure the same pollutants as their comparison Source Oriented monitors.**

For example, the Giesmar monitor (#13) only measures PM2.5 so it can't be evaluated against the "Background" measures obtained from the Dutchtown monitor (#10), as that monitor only measures ozone, NOX, and VOC.

- **LDEQ should not allow facilities to self-monitor and self-report; else they should engage in more rigorous scrutiny, follow-up and enforcement.**

Current LA law (Act 481) which passed into law during the 2021 Legislative Session, allows facilities to voluntarily self-report to LDEQ what they deem to be "*minor incidents and releases*". This law also allows LDEQ to keep release and enforcement information off public record for two years, and it no longer requires LDEQ to conduct public hearings when facilities apply for pollution permits²⁴ The new law states that "*information contained in a voluntary self-audit authorized by R.S. 30:2044 shall be held confidential by the department and shall be withheld from public disclosure until a final decision is made, or for a period not to exceed two years, whichever occurs first.*" The LA Legislative Auditor noted problems with oversight and enforcement of this voluntary self-reporting program in its 2021 report, "Monitoring and Enforcement of Air Quality, Department of Environmental Quality" ([Audit Control #40200007](#)). In this report, the auditor concluded that LDEQ should "*identify those facilities that fail to submit their required self-monitoring reports and hold them accountable*".

- **LDEQ's public risk communications should be overseen by a third party.**

This is especially critical in light of LDEQ's record for delaying the 2018 national directive to immediately communicate risks of ethylene oxide to the community, which caused the community to be exposed for almost four years without their knowledge. As such, a third-party oversight entity is needed to ensure that critical risk communication data and information are being received and understood by tax-paying citizens, public officials, area schools, and local medical providers who may be most affected.

- **All air monitors adjacent to airports, especially smaller airports in rural but populated residential neighborhoods, should include Pb in the required air monitoring.**

This would include at least one air monitor, Monroe (#23). It measures PM2.5 and ozone. This monitor should also include at the very least, lead (Pb), and should be relocated to Lincoln Elementary School, which is 1.3 miles away from the runway. It is believed that people living within 1 mile of airports are at risk of being exposed to lead from avgas.²⁵⁻²⁶ The siting of this air monitor at Lincoln Elementary would allow us to further evaluate this assertion.

²⁴Muller W. New Law keeps industrial pollution accidents hidden. *Louisiana Illuminator*, Jul 2, 2021. Available at: <https://lailluminator.com/2021/07/02/new-law-keeps-some-industrial-pollution-accidents-hidden-from-the-public/>

²⁵ Hitchens M. U.S. EPA aims to slash aviation gasoline emissions. *Glob Refining Fuels Today*. 2010;2:31–35.

²⁶ Miranda, M. L., Anthopolos, R., & Hastings, D. (2011). A geospatial analysis of the effects of aviation gasoline on childhood blood lead levels. *Environmental health perspectives*, 119(10), 1513–1516.

- **LDEQ should use the resources available to it from the EPA to identify other areas of concern requiring air monitoring, and provide evidence of compliance among these high emitting facilities. Databases and resources used in this report, as well as the National Emissions Inventory (NEI) are useful for identifying potentially high risk facilities.**²⁷

A review of TRI-reporting facilities for Louisiana via EPA's Risk Screening Environmental Indicators (RSEI) model,²⁸ and a sorting of facilities based on cancer and non-cancer RSEI scores reveals the following few high-risk facilities, where it is unknown if monitoring is being conducted at all: (1) BASF Corp, Geismar, LA, (2) St. Union Carbide, Hahnville, LA, (3) BCP Ingredients, St Gabriel, LA, (4) DOW Chemical, Plaquemine, LA, (5) Shell Chemical, Geismar, LA, (6) Evonik Corp, Reserve, LA, (7) Sasol Chemicals, Lake Charles, LA, (8) Exxon Mobil, Baton Rouge, LA, (9) Denka/Dupont, LaPlace LA (VOCs are currently being monitored), (10) LACC LLC, Lamotte Chemical, LA, (11) Shell Norco Chemical Plant, Norco, LA; (12) Formosa Plastics, East Baton Rouge, LA (13) Occidental Chemical Holding Corp, Killona and Luling, LA, and (14) Eagle US LLC, Lake Charles, LA. Other facilities with 12 months of CAA noncompliance include: (1) Addis Carbon Black Plant, (2) Birla Carbon USA, (3) C&C Marine and Repair, (4) Calumet Princeton Refining, (5) Calumet Shreveport Refining, (6) Lion Copolymer, Beismar, (7) Mosaic Phosphates Co, Faustina Plant, (7) Nucor Steel LA, (8) Phillips 66 Lake Charles Refinery, (9) Reynolds Metals Co, LLC, and (10) Shintech LA Addis Plant. Valero Refining in Norco, LA is also a concern with respect to cancer risk estimates developed by the EPA. Other areas of potential concern were identified based on a review of the 2017 NEI (most current available).²⁹

²⁷ EPA National Emissions Inventory (NEI). Available at:

<https://enviro.epa.gov/enviro/nei.htm?pType=FACILITY&pYear=2017&pWho=NEI&pState=&pState=22&pPollutant=&pPollutant=7439921&pReport=county&pCounty=&pTier=&pSector=>

²⁸ EPA. Toxics Release Inventory Risk Screening Environmental Indicator (RSEI) Model: Easy RSEI Dashboard 2.3.10. Washington DC. Available at: <https://edap.epa.gov/public/extensions/EasyRSEI/EasyRSEI.html#analysis>.

²⁹ **Lead (Pb)** (emitted >100 pounds): BD Bayou Steel, LaPlace; Oxbow Calcining LLC, Baton Rouge; Packaging Corps of America Paper Mill, DeRidder; Ardagh Glass Inc, Ruston; International Paper, Bogalusa; Graphic Packaging International LLC, Monroe; Scott, Tallulah; Rain CII Carbon LLC, Gramercy; Rain CII Carbon LLC, Chalmette; Winnsboro Municipal, Winnsboro; George R Carr Memorial, Bogalusa; Phillips 66 Alliance Refinery, Belle Chasse; St. John the Baptist Parish, Reserve; Valero Refining, St. Charles. **Carbon Monoxide (CO)** (>1000 tons): LA Generating LLC, Big Cajun II Power Plant, New Roads; Exxon Mobil Fuels and Lubricants, Baton Rouge; Entergy LA, LLC, Toy S Nelson Electric Generating Plant, Westlake; International Paper Mill, Bogalusa; Union Carbide Corp, St. Charles; Cabon Corp. Canal Plant, Centerville; Sabine Pass LNG LP Liquefaction LLC, Cameron; Cabot Corp, Ville Platte, LA; Graphic Packaging International LLC, West Monroe, LA; International Paper Co, Mansfield; Tokai Carbon CB, Ltd, Addis; CLECO Power LLC, Brame Energy Center, Lena; Exxon Mobil Chemical Plant, Baton Rouge; Packaging Corp of America, DeRidder; Louis Armstrong International Airport, New Orleans; CITGO Petroelum Corp, Lake Charles; Entergy LA LLC, Little Gypsy Generating Plant, Montz; Eagle US 2 LLC, Westlake; Ethos Energy Power Operations (West) LLC, Baton Rouge; Georgia Pacific Consumer Operations LLC, Zachary; Marathon Petroleum Co, LP Refinery Garyville; Boise Cascade Wood Products, Oakdale; and Hood Container of LA, LLC Saint Francisville.

Nitrogen Oxides (NOx) (>1000 tons): Entergy LA LLC, Westwego; Eagle US 2 LLC, Westlake; LA Generating, Big Cajun II Power Plant; Shell Chemical LP, Norco; CITGO Petroelum Corp, Sulphur; Union Carbide, Hahnville; Entergy LA, Little Gypsy, Montz; DOW Chemical Co, Plaquemine; Entergy LA, Westlake; CLECO Power LLC, Lena; Gramercy Holdings I LLC, Gramercy; CF Industries Nitrogen LLC, Donaldsonville; Sabine Pass LNG MP, Cameron; International Paper Co, Mansfield; Exxon Mobil, Baton Rouge; Equilon Enterprises, Shell Oil Products, Norco; CLECO Power LLC, Mansfield; Exxon Mobil Fuels and Lubricants, Baton Rouge; Packaging Corp of America, DeRidder; Ethos Energy Power Operations, Baton Rouge; Entergy LA LLC, Westlake; Sasol Chemicals, Westlake; Texas Gas Transmission, Youngsville; Florida Gas Transmission Franklinton; Equilon Enterprises LLC, dba Shell Oil Products, Convent; Axiall LLC, Plaquemine; and Cabot Corp, Centerville.

Fine Particulate Matter (PM2.5) (> 200 tons): Dolet Hills Lignite Co, Armistead; Exxon Mobil, Baton Rouge; DOW Chemical, Plaquemine; CITGO, Sulphur; International Paper Mill, Bogalusa; CF Industries, Donaldsonville; Graphic Packaging Int, West Monroe; Entergy LA, Westwego; International Paper Mill, Mansfield; Entergy Arkansas, Sterlington; WestRock CP LLC, Hodge; Marathon Petroleum Refinery, Garyville; Packaging Corp of America, DeRidder; Eagle US 2, Westlake; Rain CII Carbon, Gramercy; Sasol Chemicals, Westlake; Entergy LA, Westlake; Mosaic Fertilizer, St. James; Union Carbide, Hahnville; Exxon Mobile, Baton Rouge; CLECO Power, Lena; Shell Chemical, Norco; Rain CII Carbon, Chalmette.

- **The labyrinthine EDMS system needs to be refined to ensure ease of access to documents and data by the public.**

If air monitoring data does exist for the previously mentioned facilities, then this fact highlights an issue that the public has with finding and accessing data *“in a timely manner”*. Air monitoring data needs to be queryable, provided with associated metadata (e.g., information about the data, including explanations of all acronyms used in each document), and should be available in an easily usable form (excel or other formats).

- **In light of the serious criticisms of LDEQ’s air monitoring performance documented in the LA Legislative Auditor’s 2021 report,³⁰ it is recommended that regulators begin their plan with statements as to how these criticisms were addressed.**

A review and response of the 2021 LA Legislative Auditor’s report, “Monitoring and Enforcement of Air Quality, Department of Environmental Quality” ([Audit Control #402000007](#)), is necessary to ensure that LDEQ has addressed the deficiencies with its air monitoring program. Such a review will also facilitate decision making and prioritization of sites and pollutants.

It is likely that some of the facts presented here may be justifiably refuted when more evidence is unearthed, but this fact alone highlights the difficulty the public has in finding and accessing data and information from the LDEQ. Nevertheless, it is hoped that this brief and incomplete review of some of the issues with LA’s Air Monitoring Network Plan is given serious consideration, and that these comments are addressed as required by the Code of Federal Regulations (CFR) 40 § 58.10(a)(1).

Sulfur Dioxide (SO₂) (>5000 tons): Oxbow Calcining LLC, Baton Rouge; LA Generating LLC Big Cajun II Power Plant, New Roads; Cabot Corp, Ville Platte; Entergy LA, Westlake; CLECO, Mansfield; Cabot Corp, Centerville; Tokai Carbon CB, Addis; Birla Carbon, Centerville; Entergy LA, Westlake; Orion Engineered, Franklin; Rain CII Carbon LLC, Gramercy and Sulphur; CLECO, Lena.

Volatile Organic Compounds (VOCs) (>500 tons): International Paper Co, Mansfield and Bogalusa; Graphic Packaging, West Monroe; WestRock, Hodge; Firestone Polymers, Sulphur; Exxon Mobil Fuels and Lubricants, Baton Rouge; International Paper, Campti; DOW Chemicals, Plaquemine; Lion CoPolymer, Geismar; Phillips 66 Refinery, Westlake; Shell Chemical Plant, Norco; Sasol Chemicals, Westlake; Hood Container of LA, St Francisville; Equilon Enterprises LLC, Shell Oil Products, Norco; Calumet Refinery, Shreveport; West Fraser Inc Joyce Sawmill, Joyce; Equilon Enterprises, Shell, Convent; Union Carbide, Hahnville; Packaging Corp of America, DeRidder; Procter & Gamble, Pineville.

³⁰ LA Legislative Auditor. Monitoring and Enforcement of Air Quality: Department of Environmental Quality. Performance Audit Services, January 20, 2021. Available at:

[https://www.lla.la.gov/publicreports.nsf/0/4f3372abddf0f271862586630067c25d/\\$file/00022660a.pdf](https://www.lla.la.gov/publicreports.nsf/0/4f3372abddf0f271862586630067c25d/$file/00022660a.pdf)

APPENDIX A. Professional Background of Dr. Adrienne Katner

Dr. Katner is an Assistant Professor in Environmental and Occupational Health Sciences at Louisiana State University, School of Public Health (LSU-SPH). She received a Doctorate in Environmental Science and Engineering at University of California- Los Angeles (UCLA); a Masters in Soil, Water and Environmental Science from the University of Arizona, and a Bachelors in Cellular, Molecular, Developmental Biology from the University of California- Santa Cruz. Dr. Katner is recognized for her contributions related to retrospective exposure and risk assessment; environmental public health surveillance; and research into regulatory, environmental and educational interventions to reduce chemical hazard exposures. She has given over 60 scientific presentations at local, national and international conferences and contributed to over 80 peer-reviewed scientific publications and government reports. Her scholarly work was recognized by induction into the Delta Omega Public Health Honorary Society; and her research has been highlighted by NBC, CBS, CNN, NPR, and PBS. Her CV can be accessed here: <https://sph.lsuhsu.edu/people/faculty/faculty-list/katner-adrienne//>.

Prior to her academic appointment at LSU-SPH, she was a Research Fellow at the National Cancer Institute, where she evaluated retrospective exposures for a non-Hodgkin lymphoma case control study. Prior to this, she worked at UCLA's Center for Environmental Risk Reduction (CERR), where she conducted exposure and risk assessments for communities surrounding multi-use industrial complexes that were used for testing the Apollo rockets and MX missile engines, and the nation's first experimental nuclear reactors. In 2006, she moved back home to New Orleans, Louisiana to manage several statewide environmental public health programs for the Louisiana Office of Public Health (LOPH), Section of Environmental Epidemiology and Toxicology (SEET) (2006-2013). SEET is the program which authored one of the public health reports evaluated here. During her time at LOPH, she managed the Environmental Public Health Tracking Program which is charged with developing surveillance systems to identify communities whose health may be adversely impacted by chemical hazards. She also managed Louisiana's Occupational Health Surveillance Program, Fish Advisory Program, and Biomonitoring Programs.

Dr. Katner has served as a subject matter expert in prior lawsuits involving chemical releases in Louisiana's Industrial Corridor from Union Carbide; and has advised the Orleans Parish School Board, various Orleans Parish charter schools, and the Florida Department of Education on other contaminant testing and remediation matters. She has been an advisor to, and reviewer for, the RAND Corporation, the Ontario Ministry of Labour, the U.S. Agency for Toxic Substances and Disease Registry, the American Public Health Association (APHA), the Wisconsin Groundwater Coordinating Council, the Water Quality Research Foundation, the Association of Occupational and Environmental Clinics (AOEC), the Environment America Research and Policy Center, and the New Orleans Office of Inspector General. She has been a member of nine federal workgroups for U.S. Centers for Disease Control and Prevention (CDC), including the Environmental Public Health Tracking Program's Air Quality and Environmental Justice Workgroups. She has also served on the Council of State and Territorial Epidemiologists (CSTE) Policy Workgroup, and has been on state advisory boards for the Louisiana Lead Poisoning Prevention, Asthma Surveillance, Birth Defects, and Occupational Health and Injury Surveillance Programs. She serves as a scientific advisor on LSUHSC's WaTCH study for women and children impacted by the Deepwater Horizon Oil Spill; and the Louisiana Tumor Registry's Research Committee.

Dr. Katner is uniquely qualified to evaluate risks from industrial emissions in Louisiana. Her paper published in the Journal of the LA State Medical Society in May 2015 recognized risks early on that were posed by industries. These conclusions were later cited by U.S. EPA and ATSDR,³¹ and methodologies used in this paper have since been repeated by the LA Office of Public Health to prioritize parishes for cancer cluster investigations. In this paper, one conclusion she made was that St. John the Baptist Parish ranked among the highest risk parishes in LA, with chloroprene being one of the risk drivers. This paper was later followed by the EPA's December 2015 and 2018 National Air Toxics Assessments (NATA), which reaffirmed Dr. Katner's findings and which brought national attention to St. John the Baptist Parish as having the highest cancer risks from industrial emissions in the nation.

³¹ Katner, A. Prioritization of Louisiana Parishes based on Industrial Releases of Known or Suspected Carcinogens. The Journal of the Louisiana State Medical Society 167(3):122-128, April 2015.